V.92 56K External Modem Box
User Manual

PMECA95000-51

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Regulatory Statements

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.

2. Increase the separation between the equipment and receiver.

3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables, if any, must be used in order to comply with the emission limits.

FCC Requirement

This equipment complies with Part 68 of the FCC rules. On the base unit of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. If requested, this information must be given to telephone company.

The REN is useful in determining the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all area, the sum of the REN of all devices connected to one line should not exceed five (5). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum number of REN for your calling area.

If your equipment causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complain with the FCC. Your telephone company may make changes in its facilities, equipments, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The equipment may not be used on coin service by the telephone company. Connection to party lines is subject to state tariffs.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions carefully.

2. Follow all warnings and instructions marked on the product.

3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

4. Do not use this product near water.

5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

6. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation provided.

7. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

8. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

9. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet dose not exceed 15 amperes.

10. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

About this Manual

Purpose

This user guide gives you all the information you need to install and operate the modem properly.

Manual Structure

This user guide consists of five chapters and three appendixes:

Chapter 1 Getting Started
This chapter tells you what items are contained in the package and things that you need to check before you proceed the installation.

Chapter 2 Modem Overview
This chapter gives you all the necessary information that you need to know about the modem, such as its features and layout.

Chapter 3 Installing the Modem
This chapter contains step-by-step procedure on how to install the modem and other necessary peripherals, configure the modem under Windows operating system, and verify the modem installation.

Chapter 4 Communication Software
This chapter gives tips on how to configure your modem Communication software.

Chapter 5 AT Commands
This chapter guides you on how to use the AT commands that will allow you to directly control fax/modem activities.

Appendix A : Troubleshooting
Appendix B : V.92 Related AT Commands
Appendix C : Modem On Hold Quick start guide

Conventions

The following conventions are used in this manual:

`Text entered by user` Represents text input by the user.

Represent the actual keys that you have to press on the keyboard.

NOTE
Gives bits and pieces of additional information related to the current topic.

WARNING
Alerts you to any damage that might result from doing or not doing specific actions.

CAUTION
Suggests precautionary measures to avoid potential hardware or software problems.

IMPORTANT
Reminds you to take specific action relevant to the accomplishment of the task at hand.

TIP
Tells how to accomplish a task with minimum steps through little shortcuts.

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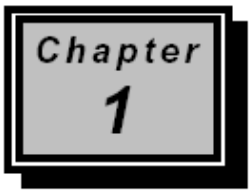
Appendix A Troubleshooting

Appendix B V.92 RELATED AT COMMAND

Appendix C Modem On Hold(MOH) Quick Start Guide



Getting Started

Congratulations on your purchase of this Data/Fax/Voice modem. This modem features the latest innovations in high-speed modem design, making electronic communication faster and easier. This User Manual will show you how to install and properly use the modem in order to take full advantage of its features.

Package Contents

Make sure that you have the following items:

- External Modem
- 26 AWG RJ11 Telephone Cable
- RS232 Serial Cable
- AC Power Adapter
- Quick Start Guide
- CD-Title with Application Software and manual

If any of the items is damaged or missing, contact your dealer immediately.

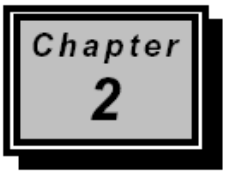
1.2 System Requirements

Before you proceed, make sure that your system meets the following requirements:

- Penitum Based (and above) IBM-compatible PC system with and empty RS-232 Interface

- At least 16 MB memory

- Windows 9X/Windows ME/Windows NT 4.0/ Windows 2000 WindowsXP operation system



Modem Overview

Before you proceed with the installation, it is necessary that you have enough information about the modem.

This chapter tells you all you need to know about the modem.

2.1 Specifications

Data Modem Operation

- Line Speed: 300 ~ 56000bps
- Standard Compatibility : ITU-T V.92, V.90, V.34, V.32,V.32bis,V.23, V.22bis, V.21, and Bell 103, 212A
- Error Correction: ITU-T V.42, MNP2-4
- Data Compression: ITU-T V.42bis, MNP5
- Flow Control: RTS/CTS, XON/XOFF
- Comment Set: TIA/EIA 602 “AT” command set

Fax Modem

- Line Speed: 2400 ~ 14400bps
- Standard Compatibility: ITU-T V.17, V.27 ter, V.29
- Command Set: Class 1, 1.0, 2 and associated AT command sets

Voice Operation

- Digital Telephone answering machine (TAM); Voice mail system

General Features

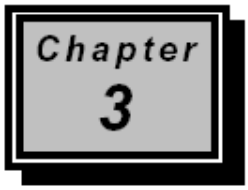
- Line Interface: 2xRJ-11 jacks for line and telephone
- DTE Interface: RS-232C serial interface
- Ambient Temperature:
  - Operating: +10 ~ +50C
  - Non-operating: -20 ~ +60C
- Humidity:
  - Operating: 20% ~ 80% RH
  - Non-operating: 20% ~ 80% RH
- Dimensions: 160mm (L) x 104mm (W) x 30mm (H)

2.2 Front Panel

The LED indicators located on the front panel report modem status and activity. The table below shows the function of each LED indicator:

Table 2-1 LEDs

Label	Name	Description
READY	Ready	Lights when power on
OH	Off Hook	Lights when modem is off hook
TXD	Transmit data	Lights when modem is transmitting Data
RXD	Receive data	Lights when modem is receiving data



Installing the Modem

This chapter contains detailed instructions on how to install and configure the modem, as well as how to verify if your installation is correct. We recommend that you follow the steps accordingly to avoid future problems.

3.1 ESD Precautions

Electrostatic discharge (ESD) can damage your processor, disk drives, expansion boards, and other system components. Always observe the following precautions before you install any system component.

1. Do not remove a component from its protective packaging until you are ready to install it.

2. Wear a wrist grounding strap and attach it to a metal part of the system unit before handling components. If a wrist strap is not available, maintain contact with the system unit throughout any procedure requiring ESD protection.

3.2 Setting up the Modem

This external modem is easy to install. Just follow the instructions below.

To install the modem:

1. Make sure that your system is turned off before you install the modem.

2. Plug the male (9-pin) serial cable into the *RS-232C* connector at the back of the modem.

3. Plug the other end of the serial cable into your system's serial port (COM1 or COM2 on your system).

4. Plug the telephone cable into the *LINE* jack located at the back of the modem.

5. Plug the other end of the telephone cable into a telephone wall jack.

6. Plug the AC adapter power cord into the *AC 9V* connector located at the back of the modem.

7. Plug the transformer end of the adapter into a standard *AC* wall outlet.

8. To connect a telephone to the modem:

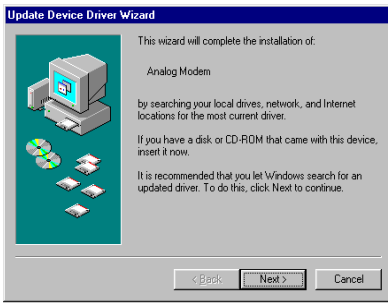
   a. Plug the telephone to the modem *PHONE* jack.

   b. Lift the handset and listen for a dial tone to check for a working connection.

NOTE: Make sure that your modem is turned off before you plug in the AC adapter. Also check the voltage range in your area before plugging your system into an outlet.

3.3 SETTING UP YOUR MODEM FOR WINDOWS 95

1. Turn on your computer. As the Windows 95 operating system boots up, an "Updated Device Driver Wizard" dialog box will shown on your screen.

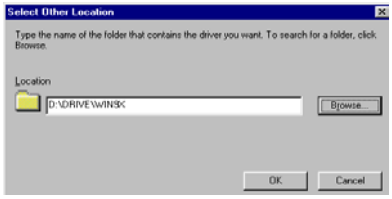

Update Device Driver Wizard
This wizard will complete the installation of:
Analog Modem
by searching your local drives, network, and Internet locations for the most current driver.
If you have a disk or CD-ROM that came with this device, insert it now.
It is recommended that you let Windows search for an updated driver. To do this, click Next to continue.
< Back
Next >
Cancel

2. Insert the driver CD into the CD-ROM device and click "**NEXT**".

3. After Windows 95 finished searching for updated drivers, click "**Other Locations**".

Update Device Driver Wizard
Windows was unable to locate a driver for this device.
If you do not want to install a driver now, click Finish. To search for a driver manually, click Other Locations. Or, to begin the automatic search again, click Back.
Other Locations...
< Back
Finish
Cancel

4. Click "**Browse**" to choose CD -ROM location(Ex: D:\Drive \Win9X), then click **"OK"** to continue



5. "Updated Device Driver Wizard" dialog box will shown on your screen, click "**Finish"**

Update Device Driver Wizard
Windows found the following updated driver for this device:
Conexant ACF External PnP V92 Data Fax Modem
If you want to use this driver, click Finish. If this is not the correct driver and you want to search for a different driver manually, click Other Locations.
Location of Driver
Win9x
Other Locations...
< Back
Finish
Cancel

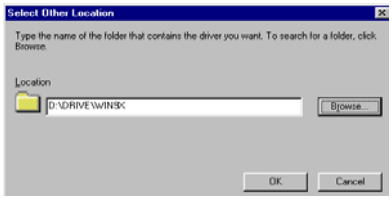
6. An new "Update Device Driver Wizard" dialog box will shown on your screen, click **"NEXT"** to continue

Update Device Driver Wizard
This wizard will complete the installation of:
Wave Device for Voice Modem
by searching your local drives, network, and Internet locations for the most current driver.
If you have a disk or CD-ROM that came with this device, insert it now.
It is recommended that you let Windows search for an updated driver. To do this, click Next to continue.
< Back
Next >
Cancel

7. After Windows 95 finished searching for updated drivers, click "**Other Locations"**.

Update Device Driver Wizard
Windows was unable to locate a driver for this device.
If you do not want to install a driver now, click Finish. To search for a driver manually, click Other Locations. Or, to begin the automatic search again, click Back.
Other Locations...
< Back
Finish
Cancel

8. Click "**Browse"** to choose CD -ROM location (Ex: D:\Drive \Win9X), then click **"OK"** to continue.



9. An "Updated Device Driver Wizard" dialog box will shown on the screen , click "**Finish"**.

Update Device Driver Wizard
Windows found the following updated driver for this device:
External Conexant Voice Modem Serial Wave Device
If you want to use this driver, click Finish. If this is not the correct driver and you want to search for a different driver manually, click Other Locations.
Location of Driver
Win9x
Other Locations...
< Back
Finish
Cancel

3.4 Setting Up Your Modem for Windows 98

1. Turn on your computer. As the Windows 98 operating system boots up, an "Add New Hardware Wizard" dialog box will shown on the screen for a few seconds with the identifier name (**Analog Modem**) of your modem.

2. Click "**Next"**, to continue

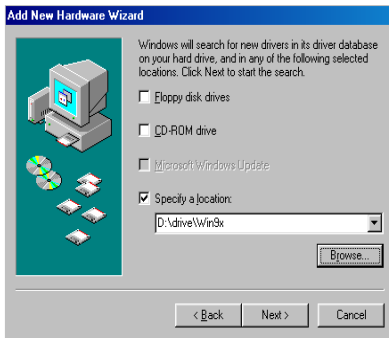
Add New Hardware Wizard
This wizard searches for new drivers for:
Analog Modem
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel

3. In the new dialog box, you have two choices to install a driver. choice the **"Search for the best driver for your device (Recommended)"** and click "**Next"**.

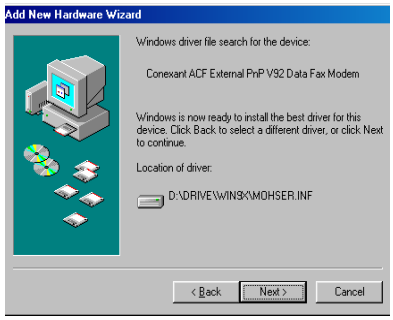
4. A new Add New Hardware Wizard dialog box will display on the screen. Insert the Driver CD into the CD-ROM device.

Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended)
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

5. Choose **"Specify a location**" to browse for driver folder, and click "**Browse"** to choose the CD-ROM location (Ex: D:\Drive \win9X).

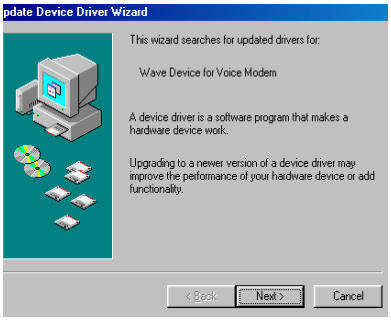

Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
D:\drive\Win9x
Browse...
< Back
Next >
Cancel

6. Windows 98 will automatically copy the necessary files into your hard disk. Click **"Next"** to continue.


Add New Hardware Wizard
Windows driver file search for the device:
Conexant ACF External PnP V92 Data Fax Modem
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
D:\DRIVE\WIN9X\MOHSER.INF
< Back
Next >
Cancel

7. A new Wizard dialog box will shown on your screen for a few seconds with

the identifier name (**Wave Device for Voice Modem**)of your modem. Click **"NEXT"**


pdate Device Driver Wizard
This wizard searches for updated drivers for:
Wave Device for Voice Modem
A device driver is a software program that makes a hardware device work.
Upgrading to a newer version of a device driver may improve the performance of your hardware device or add functionality.
< Back
Next >
Cancel

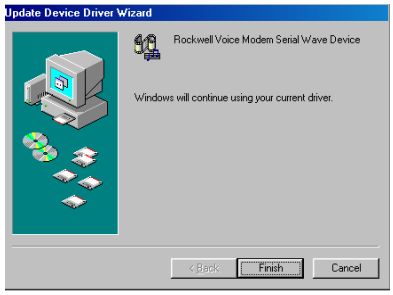
8. In the new dialog box, you have two choices to install a driver. Choice the **"Search for the best driver for your device (Recommended) "** and click "**Next"**.

Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

9. Choose **"Specify a location"** to browse for driver folder, and click "**Browse"** to choose the CD-ROM location (Ex: D:\Drive \win9X)

Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
D:\drive\Win9x
Browse...
< Back
Next >
Cancel

10. The following screen will be shown, telling you the driver for this modem been properly installed. Click "***Finish***" to confirm the installation process.



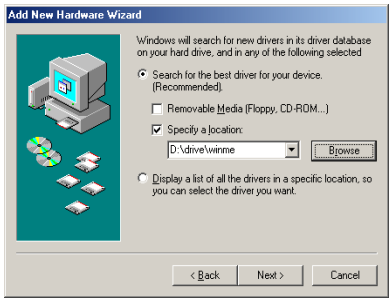
3.5 Setting Up Your Modem for Windows ME

1. Turn on your computer. As the Windows ME operating system boots up, An **"Add New Hardware Wizard"** dialog box will shown on your screen for a few seconds with the identifier name **(Analog Modem)** of your modem.

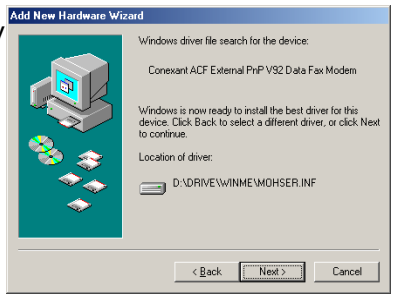
Add New Hardware Wizard
Windows has found the following new hardware:
Analog Modem
Windows can automatically search for and install software that supports your hardware. If your hardware came with installation media, insert it now and click Next.
What would you like to do?
Automatic search for a better driver (Recommended)
Specify the location of the driver (Advanced)
< Back
Next >
Cancel

2. Choose the **"Specify the location"**.

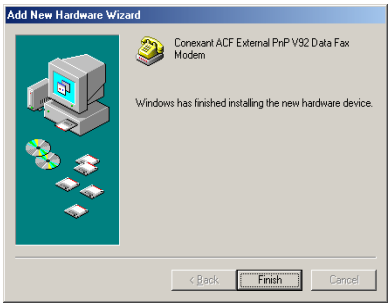
3. Then choose **"Browse"** to find the driver folder (Ex: D:\Drive \ WinMe). Click "**Next"** to continue.


Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected
Search for the best driver for your device. (Recommended).
Removable Media (Floppy, CD-ROM...)
Specify a location:
D:\drive\winme
Browse
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

4.Windows ME will copy the necessary files onto your system.Click **"Next"**.

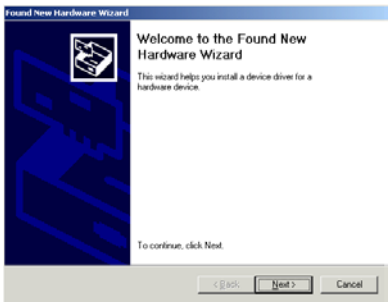

Add New Hardware Wizard
Windows driver file search for the device:
Conexant ACF External PnP V92 Data Fax Modem
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
D:\DRIVE\WINME\MOHSER.INF
< Back
Next >
Cancel

5. The Windows ME will display a new dialog box telling you that the driver been properly installed. Click "***Finish***" to confirm the installation process.

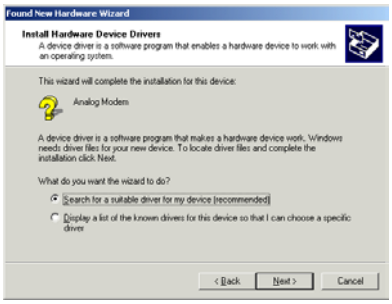

Add New Hardware Wizard
Conexant ACF External PnP V92 Data Fax Modem
Windows has finished installing the new hardware device.
< Back
Finish
Cancel

3.6 Setting Up Your Modem for Windows 2000

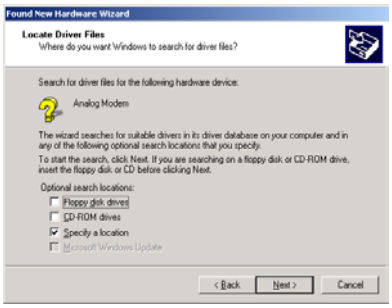
1. Turn on your computer. As the Windows 2000 operating system boots up, a **"Found New Hardware Wizard"** dialog box will shown on your screen. Click "**NEXT"**.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

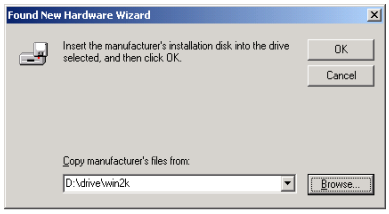
2. In the new dialog box, you have two choices to install a driver. Click **"Search for the best driver for your device (Recommended)**" and click "**Next"**.


Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
Analog Modem
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

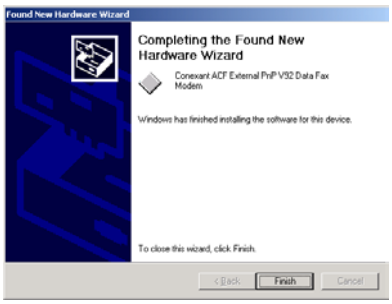
3. Choose the **"Specify a location"**, then click "**Next"**.


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
Analog Modem
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
CD-ROM drives
Specify a location
Microsoft Windows Update
< Back
Next >
Cancel

4. Insert the driver CD into the CD-ROM device. Click **"Browser"** and choose the CD- ROM Location (Ex: D\Drive \ Win2K).



5. The Windows 2000 will display a dialog box as shown, telling that the installation process been completed. Click "***Finish***" to confirm the installation of the modem**.**


Found New Hardware Wizard
Completing the Found New Hardware Wizard
Conexant ACF External PnP V92 Data Fax Modem
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

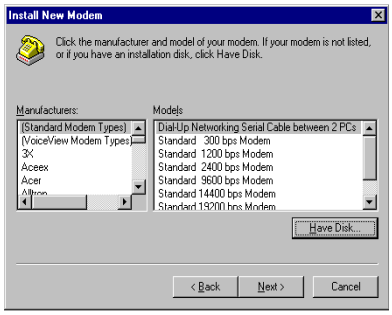
3.7 Setting Up Your Modem for Windows NT

1. Turn on your computer. As the Windows NT operating system boots up, and choose **"Start/Control panel/Modem"**

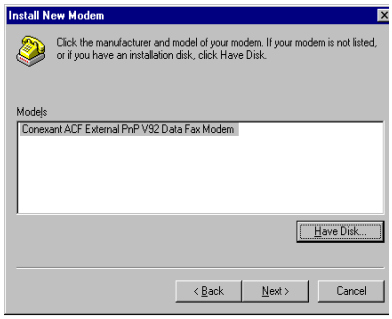
2. An **"Install New Modem"** Wizard dialog box will shown on your screen. High-light the "**Don`t detect my modem ,I will select it from a list"** and click **"NEXT"**.

Install New Modem
Windows NT will now try to detect your modem. Before continuing, you should:
1. If the modem is attached to your computer, make sure it is turned on.
2. Quit any programs that may be using the modem.
Click Next when you are ready to continue.
Don't detect my modem; I will select it from a list.
< Back
Next >
Cancel

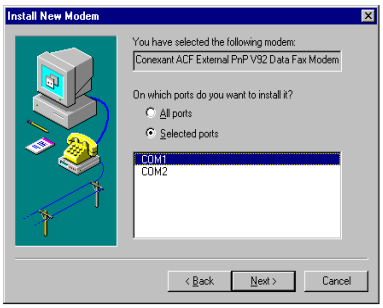
3. Choose "**Have Disk**" and Insert the driver CD into the CD-ROM device. Click Browser to choose the CD - ROM Location (Ex: D \ Drive\WinNT).


Install New Modem
Click the manufacturer and model of your modem. If your modem is not listed, or if you have an installation disk, click Have Disk.
Manufacturers:
(Standard Modem Types)
(VoiceView Modem Types)
3X
Aceex
Acer
Models
Dial-Up Networking Serial Cable between 2 PCs
Standard 300 bps Modem
Standard 1200 bps Modem
Standard 2400 bps Modem
Standard 9600 bps Modem
Standard 14400 bps Modem
Have Disk...
< Back
Next >
Cancel

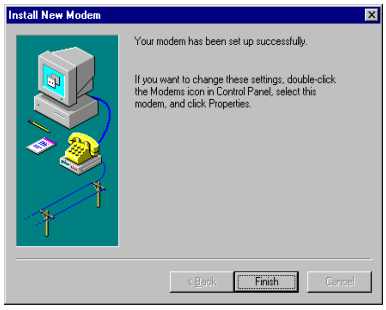
4. A new dialog box will be shown on the screen with the modem named "**Conexant ACF External PnP V92 Data Fax Modem".** Click **"NEXT"** to continue.


Install New Modem
Click the manufacturer and model of your modem. If your modem is not listed, or if you have an installation disk, click Have Disk.
Models
Conexant ACF External PnP V92 Data Fax Modem
Have Disk...
< Back
Next >
Cancel

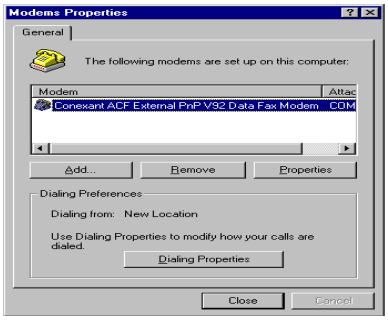
5. A new dialog box will be shown on the screen. Chose the right connecting port (COM1/COM2), and click **"NEXT"** to continue.



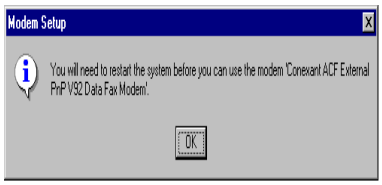
6. The Windows NT will display the dialog box as shown, telling you it has already installed the driver for the modem. Click "***Finish***" to confirm the installation process.


Install New Modem
Your modem has been set up successfully.
If you want to change these settings, double-click the Modems icon in Control Panel, select this modem, and click Properties.
< Back
Finish
Cancel

6. A new dialog box will be shown on the screen, Click **"Close"** to continue.

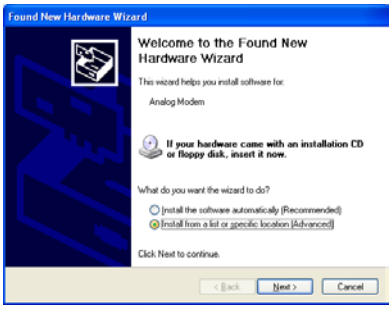


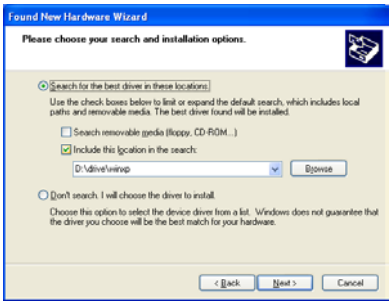
8. "You will need to restart the system before you can use the modem". Click **"OK"** to continue.


Modem Setup
You will need to restart the system before you can use the modem 'Conexant ACF External PnP V92 Data Fax Modem'.
OK

3.8 Setting Up Your Modem for Windows XP

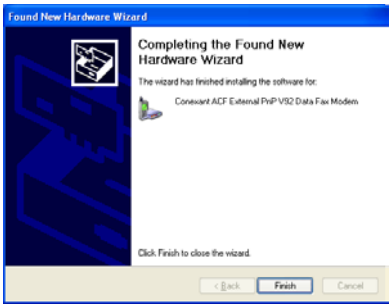
1.Turn on your computer. As the Windows XP operating system boots up, a **"Found New Hardware Wizard"** dialog box will be shown on your screen. Choose **"Install from a list location (Advanced)"** , then click **"NEXT"**.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
Analog Modem
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
D:\drive\winxp
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

2.A New Found New Hardware Wizard dialog box will display on your screen. Choose **"Include this location in the search"** then click **"Browse"** to choose the right folder (Ex: D:\Drive \WinXP). Click "**Next"** to continue.

3.The following dialog box will be shown telling you it has already installed the driver for the modem. Click "***Finish***" button to confirm the installation process.


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Conexant ACF External PnP V92 Data Fax Modem
Click Finish to close the wizard.
< Back
Finish
Cancel

3.9 Testing Your Modem Installation

To test if you have installed the modem properly:

1. Click **" Start → Programs → Accessories → Communications → Hyper Terminal "**, then double click **"Hypertrm"**.

   Under Terminal mode, a cursor appears on the screen, allowing you to send commands directly to the modem.

2. To check if your system and modem are functioning properly, type the following string :

   AT&F<Enter>

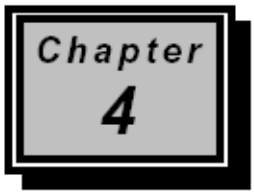
   The modem should respond **"OK"**, if any of the following screen occur, refer to Appendix A for troubleshooting.

э The characters you type do not appear

э No "OK" message appear

ɜ Double characters appear

After you have successfully installed the modem, your next step will be configuring the Communication software. Refer to Chapter 4 for details.



Communication Software

This chapter gives you tips on how to configure your communication software.

4.1 Installing the Communication Software

This Modem package comes with a Communication software and User manual CD-Title. To install the Communication software, simply insert the communications software CD into the CD-ROM drive; under Win9X/ME/NT/2000 Operating System, the **"Auto-run"** function will

start the shell program automatically. Just follow the instructions appears on the screen for the software installation.

If you wish to use other communication program, please refer to section 4.2 for more details.

4.2 Tips on Configuring the Communication Software

This modem uses the most up-to-date industry and commercially popular standards to ensure functional compatibility with most communication software. During initial setup of the communication software, it will normally prompt you to define the type of fax/modem that you are currently using. The following list guides you on how to select the proper device type.

The device type only defines the protocol by which your software will communicate with your fax/modem and does not set nor limit the speed.

1. For the Baud rate, choose any speed between 38,400 to 115,200. Your Fax/Modem will automatically adjust to the optimum transmission speed after successfully connecting with a remote Fax/Modem.

2. There are three flow controls: None, Hardware (CTS/RTS), and Software (XON/XOFF). Set your software to use either Hardware or Software flow control. If “None” is selected, the communication software will not be able to detect a buffer overflow and result in transmission errors.

3. For fax device type, choose TR29 Class 1.

4. For fax speed, choose automatic or fastest speed. Your Fax/Modem will automatically adjust to the optimum transmission speed after successfully connecting with a remote fax machine or another Fax/Modem.

5. Make sure that you have correctly set all the other parameters required by the software to operate successfully.

6. Refer to your Communication software manual for details.

You are now ready to do the Fax/Data communications.

Chapter
5

AT Commands

The AT commands are used to directly handle fax/modem data activities, such as dialing or answering a data call or sending a fax. To send commands to your modem, you must access the modem in a terminal mode which is provided by most communication software. Also, you need to know the format for typing the fax/modem commands and responses.

This chapter tells you how to properly use the AT commands.

If you will be using a communication software program to do fax/modem communication, you will probably not need to type the commands because the software program will handle these tasks for you. Similarly, you will not see the response because your software program may intercept them.

5.1 Entering a Command

To enter a command:

1. Type AT. This is the Attention Code informing the modem that a command follows. The Attention Code may be in upper or lower case.
2. Type the command. Refer to the succeeding sections.
3. Press ENTER to send the command to the modem (except for A/ and +++ commands).

For example:

ATccpp ENTER

where: AT: Attention Code
cc: any command
pp: any parameter that is required by the command

The following sections tell how to enter basic commands. The other commands are described in the AT_CMD.TXT file contained in the fax/modem driver diskette. You may use DOS EDIT or any suitable editor to view this file.

5.2 Repeating a Command (A/)

The A/ command tells the modem to repeat the last command you entered.

When entering this command, DO NOT type the AT before this command and DO NOT press ENTER after entering the command.

5.3 Dialing (D)

The D command dials the phone number. For example, to dial the number 02-1234-5678, type:

ATD12345678

Then press ENTER. All three entries are treated the same.

You may use numbers 0~9 in all dial strings. You may also use spaces, hyphens, parentheses, or any other punctuation except the dial modifiers to make the command line easier to read.

5.4 Tone or Pulse Dialing (T or P)

To tone or pulse dial a number sequence, insert a T or P between the dial command (D) and the phone number. The modem prepares for tone dialing.

If you have used P in the last dial string, you only need to enter a T in the dial string.

For example:

```
ATDT(or P)12345678
```

5.5 Pause (,)

Inserting a Pause command in the dial string inserts either a 2-second pause or the value in status register S8 in the dialing sequence.

For example:

```
ATDP,12345678
```

5.6 Wait for Second Dial Tone (W)

The W command makes the modem pause and listen for a second dial tone before continuing the dial command.

For example:

```
ATDW0212345678
```

You can use the pause and wait for second dial tone commands when using long distance services.

5.7 Call Transfer or Other On Hook Feature (!)

Enter an exclamation mark (!) to transfer a call or do something similar that requires on-hook or "flash-hook".

For example:

```
ATDT9,323-8000!,#7377
```

5.8 Wait for Silence (@)

The Wait for Silence command is used for special service like automatic paging. The @ modifier tells the modem to wait for one or more rings then listen for 5 seconds for continuous silence before dialing. If 5 seconds of silence is not detected within the time set in register S7, the modem hangs up.

5.9 Storing Telephone Numbers (&Zn=t)

The modem can store up to four sets of telephone numbers; each set dial string can contain up to 34 digits. To store telephone numbers including all the dial modifiers that you may need, enter:

```
AT&Zn=t
```

where: n = locations 0~3
t = 0~9, *, # and any of the dial modifiers T, P, W, @, ;, !.

For example, to store the dial sequence T9,1551212 at location 2, type:

```
AT&Z2=T9,1551212
```

5.10 Dialing Stored Numbers (S=n)

Enter ATDS=n to dial the phone number stored at location n (where n=0~3).

5.11 Answering a Call

5.11.1 Manual Answering (A)

The factory presets the modem to answer a call only when you enter ATA. This is useful especially if you are using only one telephone line for your modem and telephone.

5.11.2 Auto-answering (S0=n)

The modem default setting is not to answer a call unless you manually enter the ATA command. However, if you have a separate telephone line for the modem and your telephone, you can set the modem to automatically enter incoming calls.

You can specify the number of rings before the modem answers the call. To specify, type:

ATS0=n

where: n: is the number of rings after which, the modem answers the call. The settings are from 1~255. Set S0=0 to disable auto-answer (default setting).

5.12 Hanging Up or Going Off Hook (H)

Enter:

ATH to let the modem hang up.

ATH1 to let the modem go off-hook

5.13 Selecting Response Message (Vn)

The V commands tell the modem to show response messages as words or numbers. See Table 5-7 for the list of response messages in both numbers and words.

Enter:

V0	Enables number response message.
V1	Enables word response message.

5.14 Enabling/Disabling the Speaker (Mn)

This command lets you enable or disable the speaker.

Enter:

M0	Speaker always off
M1	Speaker on until carrier present (default)
M2	Speaker always on
M3	Speaker off during dialing ; speaker on until carrier Present

5.15 Adjusting the Speaker Volume (Ln)

This command sets the audio output of the speaker.

Enter:

L0	Low speaker volume
L1	Low speaker volume (default)
L2	Media speaker volume
L3	High speaker volume

5.16 Reading an S-Register Value(Sn)

To read the current value of an S-Register, type:

ATSn? ENTER

where n is an S-Register number. The modem responds with decimal value of the S-Register, in three-digit format followed by OK.

To read values from more than one S-Register, type:

ATSn?Sn? ENTER

where n specify the different S-Register numbers.

5.17 Changing an S-Register Value (Sn=x)

To change an S-Register value, type:

ATSn=x ENTER

where: n: S-Register number
x: value you want to assign to the specified S-Register

5.18 Sending Faxes

You can send a fax using the fax software. The commands are automatically issued by the fax software. In case you encounter some problems while sending or receiving a fax, refer to your fax software manual.

Some fax packages require software flow control. The modem uses the hardware flow control as the factory default. You may need to enable the software flow control to send and receive faxes.

5.19 Checking Data or Fax Status (+FCLASS=?)

This command identifies if the modem is set for data or fax operation. The possible values are 0 for data mode and 1 for fax class 1.

5.20 Quick Reference

5.20.1 Data Modem Commands

Table 5-1 Basic AT Commands

Command	Description	Function
A/	Re-execute Command	None
A	Answer	None
Bn	ITU-T or Bell	0 = Selects ITU-T V.22 at 1200 bps and ITU-T, V.21 at 300 bps 1 = Selects Bell 212A at 1200 bps and Bell 103J, at 300 bps (default) 2 = Selects ITU-T V.23 only.

Command	Description	Function
		The originating modem , transmits at 75 bps ; the answering mode, transmits at 1200 bps. 3 = Selects ITU-T V.23 only. The originating modem, transmits at 1200 bps ; the answering modem transmits at 75 bps.
Cn	Carrier Control	0 = Transmit carrier always off (default) 1 = Normal transmit carrier
Dn	Dial	N can equal a character string using any of the following: ● 0,1,2,3,4,5,6,7,8,9 (Dialing Digit) ● *,#,A,B,C or D (Tone Dial Characters) ● L Redial last number: the modem responds with Error if ATDL is issued. If L is embedded in the dial string, it is considered as a presentation character and hence ignored. ● P (Pulse Dial) ● T (Tone Dial) ● R (Reverse originate mode) ● S=n(Dial NVRAM telephone number) ● ! (Flash Hook) ● W (Wait for dial tone) ● @ (Wait for silence) ● , (Pause) ● ; (Return to command state)

Command	Description	Function
		• -() (Ignored by modem)
En	Command echo	0 = Disable echo 1 = Enable echo (default)
Fn	Online echo	0 = Enable online echo 1 = Disable online echo (default)
Hn	Switch hook control	0 = Hangs up the telephone line (default) 1 = Picks up the telephone line
In	Identification	0 = Reports product code 1 = Least significant byte 2 = Reports "OK". 3 = Identification codes 4 = Reports OEM defined identifier string 5 = Country code 6 = Data pump model
Ln	Speaker Volume	0 = Low speaker volume 1 = Low speaker volume (default) 2 = Medium speaker volume 3 = High speaker volume
Mn	Speaker Control	0 = Speaker always off 1 = Speaker on until carrier present (default) 2 = Speaker always on 3 = Speaker off during dialing; speaker on until carrier present

Command	Description	Function
Nn	Select data rate handshake	0 = Handshake only at DTE-to-modem data rate 1 = Begins handshake at DTE-to-modem data rate and falls to highest compatible rate (default)
On	Return to online Data Mode	0 = Returns to online without retrain (default) 1 = Returns to online with retrain
P	Set Pulse Dial	None
Qn	Result code display control	0 = Enables result codes (default) 1 = Disables result codes
Sn	Read/write S-Register n	=x Write value x to S –register n ? Read S-register n
T	Set Tone Dial	Default tone dial
Vn	Result Code Form	0 = Choose numeric form 1 = Choose verbose (text) form (default)
Wn	Connect Message Control	0 = Reports DTE speed response codes (default). 2 = Reports DCE speed response codes 3 = Reports DTE speed response codes and inform- ation on error correction and data compression 4 = Reports protocol, data compression, and DTE data rate

Command	Description	Function
Xn	Result Codes type	0 = Blind dial, no busy detect, CONNECT 1 = Blind dial, no busy detect, CONNECT XXXX 2 = Dial tone detect, no busy detect, CONNECT XXXX 3 = Blind dial, busy detect, CONNECT XXXX 4 = Full monitor, all messages, CONNECT XXXX(default)
Zn	Soft Reset and Restore Profile	0 = Soft reset and restore profile0 (default) 1 = Soft reset and restore profile1

Table 5-2. AT & Commands

Command	Description	Function
&Cn	DCD option	0 = DCD always on 1 = DCD normal (default)
&Dn	DTR option	0 = In Async mode, modem ignores DTR 1 = Modem switches from data mode to command mode when an on-to-off transition of DTR occurs 2 = When DTR switches off, the modem goes onhook and disables Auto-answer mode; when DTR switches on, auto-answer is enabled (Default) 3 = Turning off DTR re-initializes the modem and resets values except UART registers

Command	Description	Function
&Fn	Restore Factory Configuration	None
&Gn	Select Guard Tone	0 = Disable (default) 1 = 550 Hz 2 = 1800 Hz
&Kn	Flow Control	0 = Disable 3 = Enable RTS/CTS flow control (default) 4 = Enable XON/XOFF flow control
&Pn	Dial pulse ratio	0 = Sets 10-pps pulse dial with 39%/61% make/break 1 = Sets 10-pps pulse dial with 33%/67% make/break
&Sn	DSR Override	0 = DSR always on (default) 1 = DSR active only during handshaking and when carrier is lost
&Tn	Self Test commands	0 = Terminates test in progress (default) 1 = Initiates local analog loopback
&Vn	View active and stored profiles	0 = View active profile and stored profile 0 1 = View active profile and stored profile 1
&Wn	Store Current Configuration	0 = Store current configuration as profile 0 1 = Store current configuration as profile 1
&Yn	Designate a Default Reset Profile	0 = Use profile 0 on power up (default) 1 = Use profile 1 on power up
&Zn=X	Store Telephone Number (0-3) (up to 30 digits)	0 to 3 Specified telephone number ID x up to 30 digits for the telephone

Command	Description	Function
		number to be saved

Table 5-3. AT % Commands

Command	Description	Function
%Cn	MNP 5 data compression control	0 = No compression 1 = Enables MNP5 data compression (default)
%En	Auto-retrain control	2 = Disables auto-retrain 3 = Enables auto-retrain (default)

Table 5-4. AT \ Commands

Command	Description	Function
\Nn	Operating Mode	0 = Selects Buffer (Normal) mode with speed buffering 1 = Selects Buffer (Normal) mode with speed buffering 2 = Selects MNP Reliable mode 3 = Selects V.42 Auto-reliable mode (default) 4 = Selects V.42 Reliable mode

Table 5-5. AT + Commands

Command	Description	Function	
+MS <carrier>, <automode>, <min_rate>, <max_rate>	Select Modulation	<carrier>	Description
		V21	V.21 300 bps
		V22	V.22 1200 bps
		V22B	V.22 bis 1200 and 2400 bps
		V23C	V.23, with constant carrier; 1200bps forward and 75bps reverse
		V32	V.32 4800 and 9600 bps
		V32B	V.32 bis 7200, 9600, 12,000, and 14,400 bps
		V34	V.34 asymmetrical connections: 2400, 4800, 7200, 9600, 12,000, 14,400, 16,800, 19,200, 21,600, 24,000, 26,400, and 28,800 bps
		V.90	56-kbps V.90 asymmetrical Connections (transmit): 4800, 7200, 9600, 12,000, 14,400, 16,800, 19,200, 21,600, 24,000

Command	Description	Function
		26,400, 28,800, 31,200, 33,600bps (receive): 28,000, 29,333, 30,667, 32,000, 33,333, 34,667, 36,000, 37,333, 38,667, 40,000, 41,333, 42,667, 44,000, 45,333, 46,667, 48,000, 49,333, 50,667, 52,000, 53,333, 54,667, and 56,000bps <automode> 0 = disabled 1 = enabled (default)
+MS <carrier>, <automode>, <min_rate>, <max_rate>	Select Modulation	<min_rate> ● 300 300 bps (default) ● 1200 1200 bps ● 2400 2400 bps ● 4800 4800 bps ● 7200 7200 bps ● 9600 9600 bps ● 12000 12000 bps ● 14400 14400 bps ● 16800 16800 bps ● 19200 19200 bps ● 21600 21600 bps ● 24000 24000 bps ● 26400 26400 bps

Command	Description	Function
		• 28000 28000 bps • 28800 28800 bps • 31200 31200 bps • 33600 33600 bps
+MS <carrier>, <automode>, <min_rate>, <max_rate>	Select Modulation	<max_rate> • 300 300 bps (default) • 1200 1200 bps • 2400 2400 bps • 4800 4800 bps • 7200 7200 bps • 9600 9600 bps • 12000 12000 bps • 14400 14400 bps • 16800 16800 bps • 19200 19200 bps • 21600 21600 bps • 24000 24000 bps • 26400 26400 bps • 28000 28000 bps • 28800 28800 bps • 29333 29333 bps • 30666 30666 bps • 31200 31200 bps • 32000 32000 bps • 33333 33333 bps • 33600 33600 bps • 34000 34000 bps • 34666 34666 bps • 36000 36000 bps • 37333 37333 bps • 38000 38000 bps • 38666 38666 bps

Command	Description	Function
		• 40000 40000 bps • 41333 41333 bps • 42000 42000 bps • 42666 42666 bps • 44000 44000 bps • 45333 45333 bps • 46000 46000 bps • 48000 48000 bps • 49333 49333 bps • 50000 50000 bps • 50666 50666 bps • 52000 52000 bps • 53333 53333 bps • 54000 54000 bps • 54666 54666 bps • 56000 56000 bps (default) • 58000 58000 bps • 60000 60000 bps
+MS?	Responds with +MS setting (e.g.,+MS:56,1,300,60000, 60000,0,0)	

Table 5-6. AT Command Result Codes

Text Message	Numeric Value	Text Message	Numeric Value
OK	0	CONNECT 37333	34
CONNECT	1	CONNECT 41333	35
RING	2	CONNECT 42667	36
NO CARRIER	3	CONNECT 44000	37
ERROR	4	CONNECT 45333	38
CONNECT 1200	5	CONNECT 46667	39
NO DIALTONE	6	CONNECT 48000	42
BUSY	7	CONNECT 49333	43
NO ANSWER	8	CONNECT 49333	43
CONNECT 2400	10	CONNECT 50667	53
CONNECT 4800	11	CONNECT 52000	54
CONNECT 9600	12	CONNECT 53333	55
CONNECT 14400	13	CONNECT 54666	56
CONNECT 7200	13	CONNECT 56000	57
CONNECT 19200	14	CONNECT 57333	58
CONNECT 57600	18	CONNECT 21600	61
CONNECT 7200	24	CONNECT 24000	62
CONNECT 12000	25	CONNECT 26400	63

Text Message	Numeric Value	Text Message	Numeric Value
CONNECT 38400	28	CONNECT 28800	64
CONNECT1 15200	31	CONNECT 31200	65
CONNECT 33333	33	CONNECT 33600	66

5.20.2 Fax Modem Commands

Table 5-7. Fax Commands

Command	Description	Function
+FCLASS=n	Mode selection	0 = Data mode (default) 1 = Class 1 fax mode 8 = Voice mode enabled
+FRH=n	Receive HDLC data	3
+FRS=n	Wait for silence	1-255 (x10ms)
+FTM=n	Transmit Data	24 =V.27ter 2400 bps 48 =V.27ter 4800 bps 72 =V.29 7200 bps 73 =V.17 7200 bps long 74 =V.17 7200 bps short 96 =V.29 9600 bps 97 =V.17 9600 bps long 98 =V.17 9600 bps short 121 =V.17 12000 bps long 122 =V.17 12000 bps short

Command	Description	Function
		145 =V.17 14400 bps long 146 =V.17 14400 bps short
+FRM=n	Receive Data	24 =V.27ter 2400 bps 48 =V.27ter 4800 bps 72 =V.29 7200 bps 73 =V.17 7200 bps long 74 =V.17 7200 bps short 96 =V.29 9600 bps 97 =V.17 9600 bps long 98 =V.17 9600 bps short 121 =V.17 12000 bps long 122 =V.17 12000 bps short 145 =V.17 14400 bps long 146 =V.17 14400 bps short
+FTH=n	Transmit Data with HDLC Framing	3 =V.21 300 bps
+FRH=n	Receive Data with HDLC Framing	3 =V.21 300 bps

5.20.3 Voice Modem Commands

Table 5-8. Voice Commands

Command	Description	Function
+FCLASS =n	Mode selection	0 = Data mode (default) 1 = Class 1 fax mode 8 = Voice mode enabled
+FLO=n	Flow Control	0 = Disable XON/XOFF and

Command	Description	Function
	Select	CTS/RTS flow control 1 = Enable XON/XOFF flow control in either direction (default) 2 = The DTE uses ITU-T's RTS to control flow to the modem ; the modem uses ITU-T CTS to control flow to the DTE
+VCID=n	Caller ID Selection	0 = Disables Caller ID (default) 1 = Enables Caller ID with formatted presentation to the DTE. 2 = Enables Caller ID with unformatted presentation to the DTE.
+VDR= <enable>, <report>	Distinctive Ring Selection	<enable> <report> Function 0 --- Distinctive ring disable 1 0 The modem reports DROF and DRON Messages but does not report RING messages 1 none,0 The modem reports DROF,DRON and RING messages 2-255 --- Reserved
+VGM=n	Speakerphone Microphone Gain	n=121-131 n=128 (default)
+VGR=n	Receive Gain Selection	n=121-131 n=128 (default)
+VGS=n	Speakerphone Speaker Gain	n=121-131 n=128 (default)

Command	Description	Function
+VGT=n	Volume Selection	n=121-131 n=128 (default)
+VIT=n	DTE/DCE Inactivity Timer	n=0-255 (units of 1.0 second) n=0 Disables inactivity timer (default) n≠0 Inactivity timer active
+VNH=n	Automatic Hang-UP Control	0 = The modem retains automatic hang-up as normal in data and fax modes (default) 1 = The modem disable automatic hang-up usually found in non-voice modes 2 = The modem disable all automatic hang-up usually found in non-voice modes except a 'logical' hang-up
+VRA=n	Ringback-Goes-Away Timer	n=0-50 (in 100ms increments) n=0 The DCE returns the 'OK' code immediately after ringback n=50 (default)
+VRN=n	Ringback-Never-Appeared Timer	n=0-255 (in 1-second increments) n=0 The DCE returns the 'OK' code immediately after dialing n=10 (default)
+VRX	Record Mode	This command causes the modem to enter record mode to record voice messages
+VTX	Play Mode	This command causes the modem to start voice transmission (playback mode) and play back a previously recorded voice messages
+VSP=n	Speakerphone On/Off Control	0 = Speakerphone mode disabled (default) 1 = Speakerphone mode enabled

Command	Description	Function
#VSPS=n	Speakerphone Type Selection	0 = Telephone Emulation Mode speakerphone 1 = Digital Speakerphone
+VTD=n	Beep Tone Duration Timer	n=5-255 (units of 10ms) n=100 (default)
+VSD= <silence sensitivity> ,<length of silence>	Silence Detection (Quiet and Silence)	<silence sensitivity> range=121-131 default=128 <length of silence > range=0-255 (units of 0.1 second) value=0 Silence detection disabled default=50 Silence detection enabled

5.20.4 S-Registers

Table 5-9. S-Registers

Register	Function	Range
S0	Rings to Auto-Answer	0-255 (default = 0)
S1	Ring Counter	0-255 (default = 0)
S2	Escape Character	0-127 (default = 43)
S3	Carriage Return Character	0-127 (default = 13)
S4	Line Feed Character	0-127 (default = 10)
S5	Backspace Character	0-32,127 (default = 8)
S6	Wait before Dialing	2-255 (default = 2) Units: 1second
S7	Wait Time for Carrier	1-255 (default = 60) Units: 1second
S8	Pause time for dial modifier	0-255 (default = 2) Units: 1second
S9	Carrier recovery time	1-255 (default= 6) Units: 0.1second

S10	Carrier Loss Disconnect Time	1-255 (default = 14) Units: 0.1second
S11	DTMF Tone Duration	50-255 (default = 70) Units: 1ms
S12	Guard Time	0-255 (default = 50) Units: 20ms
S14	Bit-mapped Options	Default = 138
S16	Modem Test Options	Default = 0
S18	Modem Test Timer	0-255 (default = 0) Units: 1second
S21	Bit-mapped Options	Default = 48
S22	Bit-mapped Options	Default = 118
S23	Bit-mapped Options	Default = none
S25	Detect DTR Change	0-255 (default = 5) Units: 10ms
S27	Bit-mapped Options	Default = 64
S30	Disconnect Inactivity Timer	0-255 (default = 0) Units: 1minute
S31	Bit-mapped Options	Default = 49
S33	Sleep Mode Timer	0-90 (default = 10) Units: 1second
S37	Maximum Line Speed Attempted	0-35 (default = 0)
S91	Select transmit level	0-15 (default = 10) Units: -dBm
S92	DTMF transmit level	0-15 (default = 10) Units: -dBm

Appendix
A

Troubleshooting

This appendix contains information that will help you to solve some of the common problems you might encounter while using the modem. For further assistance, contact your dealer.

Modem does not respond to AT commands

- There may be a COM port/IRQ conflict. Reconfigure the modem COM port address and IRQ line.
- Make sure that you have set the correct COM port and IRQ in the communications software.
- Make sure the system is in Terminal mode of your communications software.
- Reset the modem to its factory defaults by typing AT&F.

Double characters display on your monitor

- Both your modem and software local echoes are on. Turn off your modem local echo by typing the ATE0 command.

Modem cannot dial and " NO DIALTONE" message appears on the monitor

- Check the phone cord connection. Make sure that the jack on the modem labeled Line is connected to an analog phone wall jack.
- The modem cannot recognize the dial tone. This is typical in some corporate PBXs. Use the ATX1 command in your setup string to enable Blind Dial.

Both modems exchange carrier signals but fail to establish a

connection

- Place the call again. The telephone company routes every call differently each time you call.
- Try calling a different modem to check if your modem is working.

The modem does not answer an incoming call

- Auto-answer function is disabled. Enable the function through software program or by sending the ATS0=1 command to your modem in terminal mode.

The modem disconnects while online

- This may be caused by line interference. Retry the connection by dialing the numbers several times.
- An incoming call may have broken the connection if the Callwaiting feature is enabled. Disable Call-waiting and try again.

Garbage characters display on the monitor

- Set your modem to the same word length, parity, and stop bits as the remote modem.
- Make sure that your software and modem are set to the same flow control setting.
- The software may not be set for correct terminal emulation. Configure the software to correct type. ANSI terminal emulation is the most commonly used.
- Type the AT&F1 command to load the template that enables hardware flow control as other optimal settings.

Your communication software is reporting many cyclic

redundancy check (CRC) errors and low characters per second (CPS)

- You might have experienced noise on the phone line. Place the call again. The phone company routes call differently each time you call.
- Type the AT&F1 command to load the template that enables the hardware flow control as other optimal settings.
- Lower the serial port rate in your communication software to 38,400 bps or 19,200 bps.
- Try a different file transfer protocol (do not use the XMODEM if other protocols are available).

You cannot run the fax and communications software at the same time

- Communication devices can be accessed by only one application at a time.
- In Windows 9X/ME/NT/2000/XP, you can open data and fax communications at the same time, but they cannot use the same modem at the same time.

Appendix B V.92 RELATED AT COMMANDS

+PIG - PCM Upstream Ignore

This command controls the selection of PCM upstream in the modem. The actual state of PCM upstream is determined by the state of this command as well as the state of a negotiated handshake with a V.92-compliant server in V.92 Mode.

Syntax

+PIG=<value>

Defined Values

<value> Decimal number corresponding to the selected operation.

0 Enable PCM upstream negotiation.
1 Disable PCM upstream negotiation. (Default.)

Result Codes

OK 0 or 1 in V.92 Mode (+MS=V.92)
RROR Otherwise

Reporting Selected Value(s)

Command: +PIG?
Response: +PIG: <value>
Example: +PIG: 1 For the default setting.

Reporting Supported Range of Parameter Values

Command: +PIG=?
Response: +PIG: (<value> range)
Example: +PCW: (0,1)

+PMH - Modem-on-Hold Enable

This command controls the selection of modem-on-hold in the modem. The action of the modem in response to modem-on-hold events is determined by the state of this command as well as the state of a negotiated handshake with a V.92-compliant server in V.92 mode.

Syntax
+PMH=<value>

Defined Values
<value> Decimal number corresponding to the selected operation.

0 Modem-on-hold enabled in V.92 Mode. (Default.)
1 Disabled modem-on-hold.

Result Codes
OK 0 or 1 in V.92 Mode (see the +MS command)
ERROR Otherwise.

Reporting Current or Selected Value
Command: +PMH?
Response: +PMH: <current value>
Example: +PMH: 0 For the default setting.

Reporting Supported Range of Parameter Values
Command: +PMH=?
Response: +PMH: (<value> range)
Example: +PMH: (0,1)

+PMHF - V.92 Modem-on-Hold Hook Flash
This command causes the modem to initiate the flash hook sequence when in the modem-on-hold procedure. This enables switching to the second call (incoming or outgoing). This command applies only to V.92 modem-on-hold.
There are no parameters associated with this command.

Syntax
+PMHF

Result Code

OK When the modem completes the flash hook sequence.
ERROR If this command is initiated and the modem is not on hold.

+PMHR - Initiate Modem-on-Hold

This command requests the modem to initiate or to confirm a modem-on-hold procedure. The modem will return ERROR if modem-on-hold is not enabled or if the modem is in an idle condition. The modem will return the string response +PMHR: <value> where <value> is a decimal value corresponding to the status of the modem's hold exchange procedure as defined below. This response may be delayed depending upon the context under which the +PMHR command is made, i.e., if the +PMHR is in response to an incoming modem-on-hold or if it is initiating a request.

Note: If modem-on-hold is enabled but the remote server does not support V.92 then the modem will always report 0 to show that the hold request is denied.

Syntax

+PMHR

Response

+PMHR:<value>
<value> Decimal number corresponding to the maximum hold time the server or hold-granting modem will allow.
0 V.92 MOH request denied or not available.
1 MOH with 10 second timeout Granted.
2 MOH with 20 second timeout Granted.
3 MOH with 30 second timeout Granted.
4 MOH with 40 second timeout Granted.
5 MOH with 1 minute timeout Granted.
6 MOH with 2 minute timeout Granted.
7 MOH with 3 minute timeout Granted.
8 MOH with 4 minute timeout Granted
9 MOH with 6 minute timeout Granted.
10 MOH with 8 minute timeout Granted.
11 MOH with 12 minute timeout Granted.
12 MOH with 16 minute timeout Granted.
13 MOH with indefinite timeout Granted.

Result Codes

OK 0-13 in V.92 Mode (+MS=V92)
ERROR Otherwise

+PMHT – Modem-on-Hold Timer

This command controls whether or not the modem will grant or deny a modem-on-hold (MOH) request as well as setting the MOH Timeout value.

Syntax

+PMHT=<value>

Defined Values

<value> Decimal number corresponding to selected setting.
0 Deny V.92 modem-on-hold Request (Default.)
1 Grant MOH with 10 second timeout
2 Grant MOH with 20 second timeout
3 Grant MOH with 30 second timeout
4 Grant MOH with 40 second timeout
5 Grant MOH with 1 minute timeout
6 Grant MOH with 2 minute timeout
7 Grant MOH with 3 minute timeout
8 Grant MOH with 4 minute timeout
9 Grant MOH with 6 minute timeout
10 Grant MOH with 8 minute timeout
11 Grant MOH with 12 minute timeout
12 Grant MOH with 16 minute timeout
13 Grant MOH with indefinite timeout

Result Codes

OK 0-13 in V.92 Mode (+MS=V92)
ERROR Otherwise

Reporting Current or Selected Values

Command: +PMHT?
Response: +PMHT: <value>
Example: +PMHT: 0 For the default setting.

Reporting Supported Range of Parameter Values

Command: +PMHT=?
Response: +PMHT: (<value> range)

Example: +PMHT: (0,1,2,3,4,5,6,7,8,9,10,11,12,13)

+PCW - Call Waiting Enable

This command controls the operation of the modem in the presence of call waiting.

Syntax

+PCW=<value>

Defined Values

<value> Decimal number corresponding to the selected operation.
0 Request modem-on-hold if enabled by +PMH and collect caller ID information if enabled
by +VRID. Toggle V.24 circuit 125. (Default.)
1 Hang-up.
2 Ignore call waiting.

Result Codes

OK <value> = 0, 1, or 2.
ERROR Otherwise.

Reporting Selected Value(s)

Command: +PCW?
Response: +PCW: <value>
Example: +PCW: 0 For the default setting.

Reporting Supported Range of Parameter Values

Command: +PCW=?
Response: +PCW: (<value> range)
Example: +PCW: (0,1,2)

+PQC - V.92 Phase 1 and Phase 2 Control

This command controls the global enabling or disabling of the V.92 shortened Phase 1 and Phase 2 startup procedures. This command is used in conjunction with the +PSS command.

Syntax

+PQC=<value>

Defined Values

<value> Decimal number corresponding to the selected setting.

0 Enable Short Phase 1 and Short Phase 2. (Default.)
1 Enable Short Phase 1 only.
2 Not supported.
3 Disable Short Phase 1 and Short Phase 2.

Result Codes

OK 0, 1, or 3 in V.92 Mode (+MS=V.92)
ERROR Otherwise

Reporting Selected Values

Command: +PQC?
Response: +PQC: <value>
Example: +PQC: 0

Reporting Supported Range of Parameter Values

Command: +PQC=?
Response: +PQC: (<value> range)
Example: +PQC: (0,1,3)

-QCPC - Force Full Startup Procedure Next Connection

This command causes the modem to use full startup procedures on the next connection attempt regardless of the setting of the +PQC command. After this attempt, the modem will select the startup procedure as defined by the +PQC command. If a shortened startup procedure is enabled by the +PQC command, then the quick connect profile will also be updated on the next connection attempt.

Syntax

-QCPC

Result Code

OK In V.92 Mode (+MS=V.92)

ERROR Otherwise

-QCPS - Enable Quick Connect Profile Save

This command controls whether or not the modem will save the generated quick connect profile.

Syntax

-QCPS=<value>

Defined Values

<value> Decimal number corresponding to the desired operation.
0 Do not allow the quick connect profile to be saved.
1 Allow the quick connect profile to be saved. (Default.)

Result Codes

OK 0 or 1 in V.92 Mode (+MS=V.92) and quick connect is enabled (+PSS = 0)
ERROR Otherwise

Reporting Selected Value(s)

Command: -QCPS?
Response: -QCPS: <value>
Example: -QCPS: 1 For the default setting.

Reporting Supported Range of Parameter Values

Command: -QCPS=?
Response: -QCPS: (<value> range)

Example: -QCPS: (0,1)

+PSS - Use Short Sequence

This command causes a calling modem to force either a V.92 short or full startup sequence as defined by the +PQC command on the next and subsequent connections.

Syntax

+PSS=<value>

Defined Values

<value> Decimal number corresponding to the selected sequence. 0 The modems decide whether or not to use the short startup procedures. The short startup procedures can only be used if enabled by the +PQC command.(Default.)

1 Reserved.

2 Forces the use of the full startup procedures on the next and subsequent connections independent of the setting of the +PQC command.

Result Codes

OK 0 - 2 in V.92 Mode (+MS=V.92)

ERROR Otherwise

Reporting Selected Values

Command: +PSS?

Response: +PSS: <value>

Example: +PSS: 0 For the default <value>.

Reporting Supported Range of Parameter Values

Command: +PSS=?

Response: +PSS: (<value> range)

Example: +PSS: (0,1,2)

Appendix C

Modem-On-Hold (MOH)

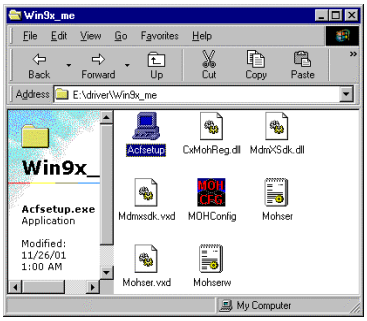
Quick Start Guide

The installation process for Modem-On-Hold

For WINDOWS 98/ME/2K/XP Only

Setting Up Your Modem for Windows 98

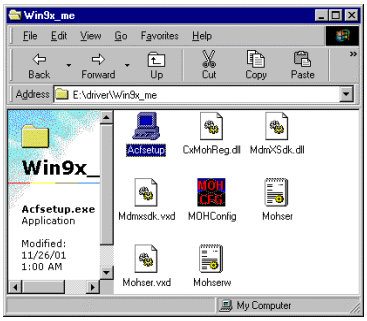
1.Turn on your computer. After the Windows 98 operating system boots up, choose the CD-ROM location (Ex: E:\driver\ win9x_me) and double click the **"Acfsetup.exe"** program. The installation process will proceed automatically.



Note : please continue to MOH configuration Setting

Setting Up Your Modem for Windows me

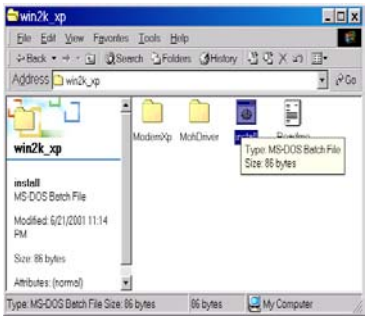
1. Turn on your computer. After the Windows ME operating system boots up, choose the CD-ROM location (Ex: E:\driver\ win9x_me) and double click the **"Acfsetup.exe"** program. The installation process will proceed automatically.



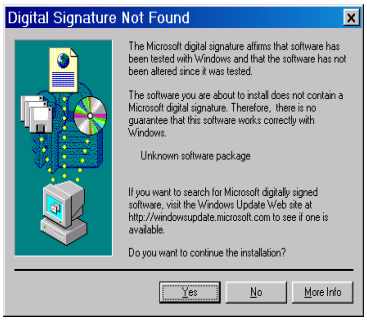
Note : please continue to MOH configuration Setting

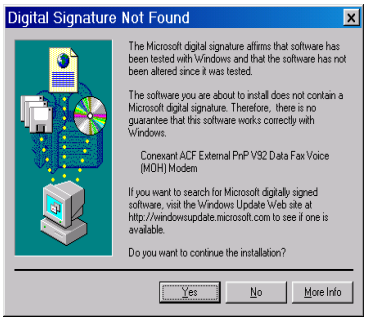
Setting Up Your Modem for Windows 2000

1.Turn on your computer. After the Windows 2000 operating system boots up, choose the CD-ROM location (Ex: E:\driver\ win2k_xp) and double click the **"Install.exe"** program. The installation process will proceed automatically.



2. Click ***"YES"***. when the following dialog box appears on the screen.

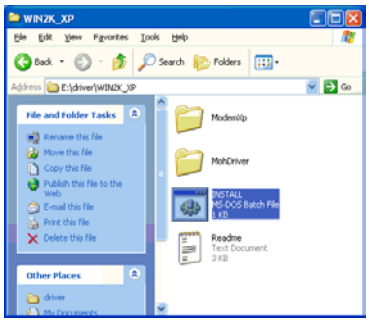

Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Unknown software package
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info


Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Conexant ACF External PnP V92 Data Fax Voice (MOH) Modem
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

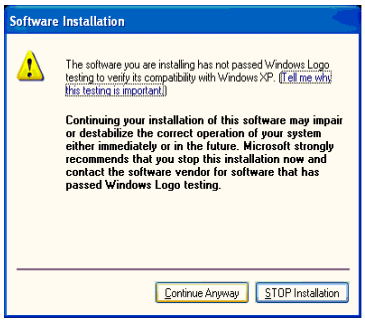
Note : please continue to MOH configuration Setting

Setting Up Your Modem for Windows XP

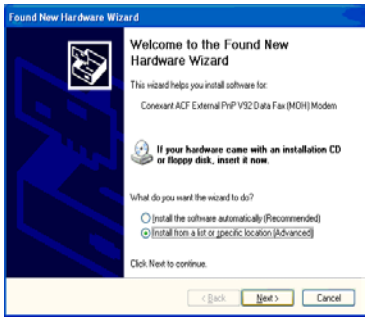
1. Turn on your computer. After the Windows XP operating system boots up, choose the CD-ROM location (Ex: E:\driver\ win2k_xp) and double click the **"Install.*exe*"** program.



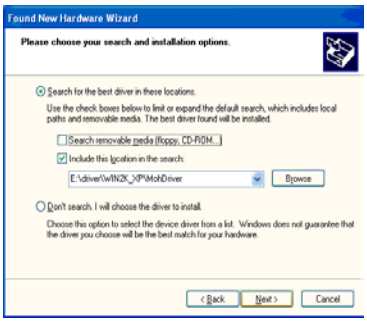
2. Click ***"Continue Anyway"*** when the following new dialog box appears on the screen.


Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

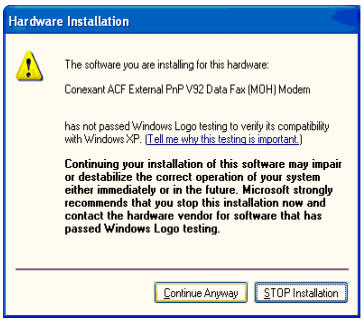
3. Choose **"Install from a list location (Advanced)"**, then click **"NEXT"**.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
Conexant ACF External PnP V92 Data Fax (MOH) Modem
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

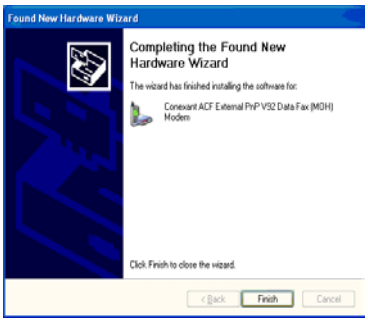
4. Choose ***"Include this location in the search"*** then click ***"Browse"*** to find the right folder (Ex: E:\ Driver \Win2k_XP\mohdriver), and click ***"Next"*** to continue.


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
E:\driver\WIN2K_XP\MohDriver
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

5. Click ***"Continue Anyway"*** to go on for the installation process.


Hardware Installation
The software you are installing for this hardware:
Conexant ACF External PnP V92 Data Fax (MOH) Modem
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

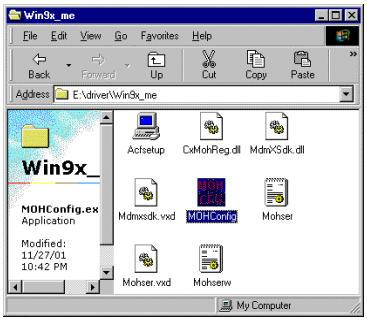
6. Click "***Finish***" to confirm the installation of the modem.


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Conexant ACF External PnP V92 Data Fax (MOH) Modem
Click Finish to close the wizard.
< Back
Finish
Cancel

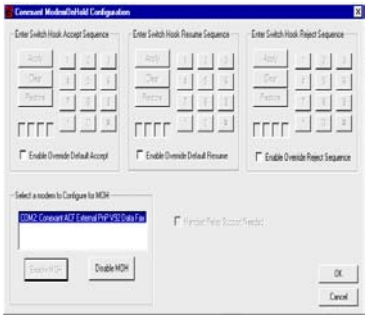
Note : please continue to MOH configuration Setting

MOH configuration Setting

1. Choose the CD-ROM location (Ex: E:\ MOHConfig) then double c*lick the* ***"MOHconfig"*** program to get into the Modem-On-Hold configurations.

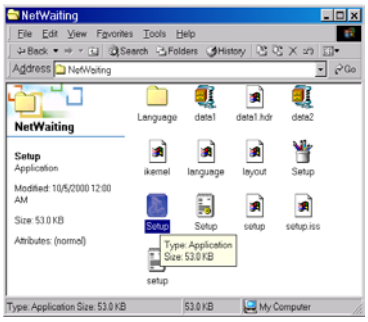


2. Execute ***"MOHConfig"*** will enable MOH functions on the newly installed Modem. (***"Conexant ACF External PnP V92 Data Fax (MOH) Modem").*** Select the modem as shown then click the ***"Enable MOH"*** button. Click ***"OK"*** to exit.

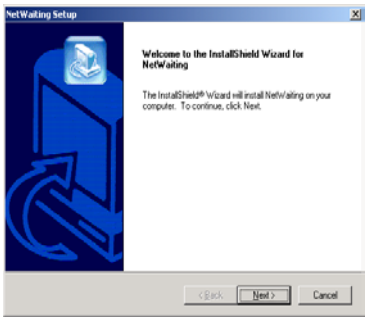


Installation process for NetWaiting

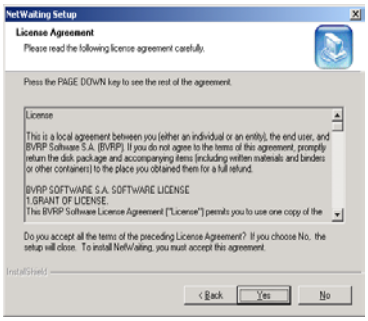
1.Choose the CD-ROM location and the right folder (Ex: E:\NetWaiting). *Click **"SETUP"*** to into the Modem On Hold configuration



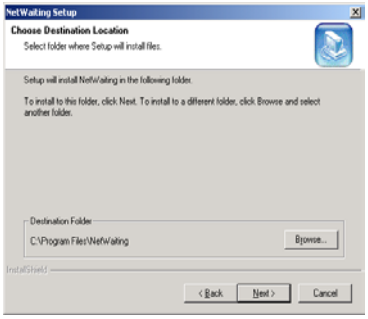
2.The install shield Wizard will install NetWaiting on you computer. click ***"Next"*** to continue.


NetWaiting Setup
Welcome to the InstallShield Wizard for NetWaiting
The InstallShield® Wizard will install NetWaiting on your computer. To continue, click Next.
< Back
Next >
Cancel

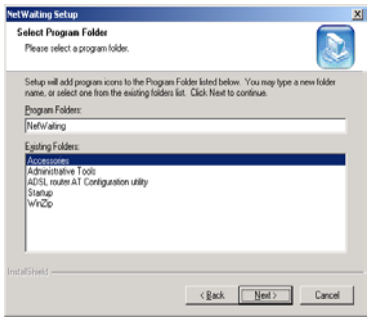
3. The license agreement dialog box will be shown. Click ***"YES"*** to continue the installation process.


NetWaiting Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
License
This is a local agreement between you (either an individual or an entity), the end user, and BVRP Software S.A. (BVRP). If you do not agree to the terms of this agreement, promptly return the disk package and accompanying items (including written materials and binders or other containers) to the place you obtained them for a full refund.
BVRP SOFTWARE S.A. SOFTWARE LICENSE
1.GRANT OF LICENSE.
This BVRP Software License Agreement ("License") permits you to use one copy of the
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install NetWaiting, you must accept this agreement.
InstallShield
< Back
Yes
No

3. The necessary files will be automatically copy to the folder as shown. Click ***"NEXT"*** to continue.
Or click ***"Browse"*** to select another folder.


NetWaiting Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install NetWaiting in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\NetWaiting
Browse...
InstallShield
< Back
Next >
Cancel

4.The setup process will add a program icons to the program folder as shown. You may type a new folder name or choose one from the existing folders list. Click ***"Next"*** to continue


NetWaiting Setup
Select Program Folder
Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
Program Folders:
NetWaiting
Existing Folders:
Accessories
Administrative Tools
ADSL router AT Configuration utility
Startup
WinZip
InstallShield
< Back
Next >
Cancel

5.Click "***Finish***" to confirm the installation of the program.